

WHAT IS CLAIMED:

1. An encapsulated organic electronic device, comprising:
 - a substrate;
 - an organic electronic device on said substrate;
 - an epoxy on said substrate, said epoxy surrounds a perimeter of said organic electronic device; and
 - an encapsulation lid on said epoxy,wherein said epoxy is a liquid or a gel when it is applied to said encapsulation lid or said substrate, and said epoxy includes a desiccant, said desiccant is: barium oxide, calcium oxide, magnesium oxide, cobalt chloride, calcium chloride, calcium bromide, lithium chloride, zinc chloride, zinc bromide, sodium molecular, silicon dioxide, aluminum oxide, calcium sulfate, copper sulfate, potassium carbonate, magnesium carbonate, titanium dioxide, bentonite, acidic clay, montmorillonite, diatomaceous earth silica alumina, zeolite, silica, zirconia, activated carbon, or a mixture thereof.
2. The encapsulated organic electronic device of claim 1 wherein said epoxy bonds said encapsulation lid to said substrate, and absorbs at least one of: oxygen and moisture.
3. The encapsulated organic electronic device of claim 1 wherein an interior portion of said encapsulation lid does not have a cavity.
4. The encapsulated organic electronic device of claim 1 wherein said epoxy is applied using a syringe needle or by screen printing.
5. The encapsulated organic electronic device of claim 1 wherein said epoxy further includes an epoxy resin, and a hardener.
6. The encapsulated organic electronic device of claim 5 wherein said epoxy further includes at least one filler.

7. The encapsulated organic electronic device of claim 1 wherein said desiccant is a finely particulated solid and an average particle size is less than 10 microns.
8. The encapsulated organic electronic device of claim 1 wherein said epoxy is cured only after said epoxy is applied on said encapsulation lid or said substrate.
9. The encapsulated organic electronic device of claim 1 wherein said organic electronic device is an OLED display, an OLED light source used for general purpose lighting, an organic transistor array, an organic light sensor array, an organic solar cell array, or an organic laser array.
10. A method to encapsulate an organic electronic device, comprising:
fabricating said organic electronic device on a substrate;
applying an epoxy on an encapsulation lid or on said substrate such that when said encapsulation lid, said substrate, and said epoxy are brought together, said epoxy is around a perimeter of said organic electronic device;
depositing an encapsulation lid over said organic electronic device such that said epoxy contacts both said substrate and said encapsulation lid to encapsulate said organic electronic device; and
curing said epoxy,
wherein said epoxy is a liquid or a gel when it is applied to said encapsulation lid or said substrate, and said epoxy includes a desiccant, said desiccant is: barium oxide, calcium oxide, magnesium oxide, cobalt chloride, calcium chloride, calcium bromide, lithium chloride, zinc chloride, zinc bromide, sodium molecular, silicon dioxide, aluminum oxide, calcium sulfate, copper sulfate, potassium carbonate, magnesium carbonate, titanium dioxide, bentonite, acidic clay, montmorillonite, diatomaceous earth silica alumina, zeolite, silica, zirconia, activated carbon, or a mixture thereof.
11. The method of claim 10 wherein said epoxy bonds said encapsulation lid to said substrate, and absorbs at least one of: oxygen and moisture.

12. The method of claim 10 wherein an interior portion of said encapsulation lid does not have a cavity.
13. The method of claim 10 further comprising shaping said epoxy as said epoxy is applied on said encapsulation lid or on said substrate such that when said encapsulation lid, said substrate, and said epoxy are brought together, said epoxy is around a perimeter of said organic electronic device.
14. The method of claim 10 wherein said epoxy is applied using a syringe needle or by screen printing.
15. The method of claim 10 further comprising, prior to applying said epoxy, forming said epoxy by mixing said desiccant with an epoxy resin to form a solution and then mixing said solution with a hardener to form said epoxy.
16. The method of claim 10 further comprising, prior to applying said epoxy, forming said epoxy by mixing said desiccant, an epoxy resin, a hardener, and a UV-catalyst to form said epoxy.
17. The method of claim 10 further comprising, prior to applying said epoxy, grinding said desiccant into a plurality of particles with a high surface area, wherein an average particle size of said plurality of particles is less than 10 microns.
18. The method of claim 10 wherein said epoxy is cured only after it is applied on said encapsulation lid or said substrate.
19. The method of claim 10 wherein a shape of said epoxy is formed as said epoxy is applied to said encapsulation lid or said substrate.
20. The method of claim 10 wherein said organic electronic device is an OLED display, an OLED light source used for general purpose lighting, an organic transistor

array, an organic light sensor array, an organic solar cell array, or an organic laser array.

21. An encapsulated organic electronic device, comprising:
 - a substrate;
 - an organic electronic device on said substrate;
 - a desiccant ring on said substrate, said desiccant ring surrounds a perimeter of said organic electronic device;
 - an epoxy on said substrate, said epoxy surrounds a perimeter of said desiccant ring; and
 - an encapsulation lid on said epoxy,wherein prior to applying said epoxy, said desiccant ring is evaporated onto said encapsulation lid, said desiccant ring is made of: an alkali metal or an alkaline-earth metal.
22. The encapsulated organic electronic device of claim 21 wherein said desiccant ring is comprised of barium or calcium.
23. The encapsulated organic electronic device of claim 21 wherein said desiccant ring absorbs at least one of: oxygen and moisture.
24. The encapsulated organic electronic device of claim 21 wherein a height of said desiccant ring has a range between 300nm to 1 micron.
25. The encapsulated organic electronic device of claim 21 wherein said epoxy does not absorb oxygen or moisture.
26. The encapsulated organic electronic device of claim 21 wherein said epoxy absorbs at least one of: oxygen and moisture.
27. The encapsulated organic electronic device of claim 26 wherein said epoxy includes a desiccant, said desiccant is: barium oxide, calcium oxide, magnesium oxide,

cobalt chloride, calcium chloride, calcium bromide, lithium chloride, zinc chloride, zinc bromide, sodium molevular, silicon dioxide, aluminum oxide, calcium sulfate, copper sulfate, potassium carbonate, magnesium carbonate, titanium dioxide, bentonite, acidic clay, montmorillonite, diatomaceous earth silica alumina, zeolite, silica, zirconia, activated carbon, or a mixture thereof.

28. The encapsulated organic electronic device of claim 21 wherein an interior portion of said encapsulation lid does not have a cavity.

29. The encapsulated organic electronic device of claim 21 wherein said organic electronic device is an OLED display, an OLED light source used for general purpose lighting, an organic transistor array, an organic light sensor array, an organic solar cell array, or an organic laser array.

30. A method to encapsulate an organic electronic device, comprising:
fabricating said organic electronic device on a substrate;
evaporating an desiccant ring on an encapsulation lid such that when said substrate, said encapsulation lid, and an epoxy are brought together, said desiccant ring is around a perimeter of said organic electronic device;
applying an epoxy on said encapsulation lid or on said substrate such that when said substrate, said encapsulation lid, and said epoxy are brought together, said epoxy is around a perimeter of said desiccant ring; and
depositing an encapsulation lid over said organic electronic device such that said epoxy contacts both said substrate and said encapsulation lid to encapsulate said organic electronic device,
wherein said desiccant ring is made of: an alkali metal or an alkaline-earth metal.

31. The method of claim 30 wherein said desiccant ring is comprised of barium or calcium.

32. The method of claim 30 wherein said desiccant ring absorbs at least one of: oxygen and moisture.

33. The method of claim 30 wherein a height of said desiccant ring has a range between 300nm to 1 micron.

34. The method of claim 30 wherein said epoxy includes a desiccant, said desiccant is: barium oxide, calcium oxide, magnesium oxide, cobalt chloride, calcium chloride, calcium bromide, lithium chloride, zinc chloride, zinc bromide, sodium molecular, silicon dioxide, aluminum oxide, calcium sulfate, copper sulfate, potassium carbonate, magnesium carbonate, titanium dioxide, bentonite, acidic clay, montmorillonite, diatomaceous earth silica alumina, zeolite, silica, zirconia, activated carbon, or a mixture thereof.